

## SLEET.

Pike's Peak, Colorado, 1st.  
 Fort Buford, Dakota, 26th.  
 Chicago, Illinois, 30th.  
 Dubuque, Iowa, 20th.  
 Des Moines, Iowa, 27th.  
 Detroit, Michigan, 4th.  
 Grand Haven, Michigan, 4th, 20th.  
 Escanaba, Michigan, 19th, 20th, 31st.  
 Saint Vincent, Minnesota, 30th.  
 Fort Robinson, Nebraska, 17th.  
 Crete, Nebraska, 18th.  
 North Platte, Nebraska, 18th.  
 Mount Washington, New Hampshire, 4th, 5th, 6th, 13th, 30th.  
 Oswego, New York, 7th.  
 Rochester, New York, 30th.  
 Tiffin, Ohio, 6th.  
 North Lewisburg, Ohio, 6th.  
 Garrettsville, Ohio, 30th.  
 Wauseon, Ohio, 31st.  
 Yellow Springs, Ohio, 31st.  
 Erie, Pennsylvania, 21st.  
 Charlotte, Vermont, 30th.  
 La Crosse, Wisconsin, 31st.

## TEMPERATURE OF WATER.

The following table shows the highest and lowest temperatures of water observed at the several stations; the monthly ranges of water temperature; the average depth at which the observations were made; and the mean temperature of the air:

Temperature of water for October, 1885.

Station.	Temperature at bottom.		Range.	Average depth, feet and tenths.	Mean temperature of the air at station.
	Max.	Min.			
Atlantic City, New Jersey .....	66.0	54.1	11.1	11.4	55.8
Alpena, Michigan .....	60.3	37.0	23.3	12.6	42.5
Augusta, Georgia .....	68.5	58.0	10.5	10.0	59.8
Baltimore, Maryland .....	68.4	59.0	9.4	10.6	55.4
Block Island, Rhode Island .....	61.2	53.3	7.9	8.4	54.5
Boston, Massachusetts .....	57.8	50.1	7.7	20.3	51.0
Buffalo, New York .....	66.0	44.9	21.1	9.7	49.2
Canby, Fort, Washington Territory .....	63.1	53.9	9.2	15.7	55.1
Cedar Keys, Florida .....	82.0	65.6	16.4	8.4	68.8
Charleston, South Carolina .....	74.1	62.2	11.9	38.5	65.2
Chicago, Illinois .....	66.6	38.9	27.7	8.8	51.1
Chincoteague, Virginia .....	70.3	54.3	16.0	3.6	58.8
Cleveland, Ohio .....	64.0	51.1	12.9	14.0	50.1
Detroit, Michigan .....	64.9	46.5	18.4	25.8	50.0
Duluth, Minnesota .....	52.2	43.9	8.3	10.7	41.7
Eastport, Maine .....	51.7	49.4	2.3	17.2	47.9
Escanaba, Michigan .....	59.1	46.8	12.3	19.6	42.1
Galveston, Texas .....	79.5	63.0	16.5	12.8	69.7
Grand Haven, Michigan .....	66.3	44.7	21.6	19.0	45.8
Indianola, Texas .....	82.5	59.6	22.9	8.9	69.8
Jacksonville, Florida .....	79.2	66.2	13.0	18.0	67.6
Key West, Florida .....	85.1	75.0	10.1	17.8	77.8
Mackinaw City, Michigan .....	56.6	43.3	13.3	10.0	43.9
Macon, Fort, North Carolina .....	74.8	63.0	11.8	13.6	63.5
Marquette, Michigan .....	54.5	43.1	11.4	12.6	41.6
Milwaukee, Wisconsin .....	59.8	49.9	9.9	8.0	46.4
Mobile, Alabama .....	77.7	61.9	15.8	15.9	62.9
New Haven, Connecticut .....	66.4	52.6	13.8	16.6	51.6
New London, Connecticut .....	65.0	57.0	8.0	18.8	54.5
New York City .....	71.7	58.0	13.7	16.2	60.4
Norfolk, Virginia .....	81.2	65.0	16.2	17.4	64.7
Pensacola, Florida .....	53.1	48.3	4.8	16.9	47.5
Portland, Maine .....	65.0	53.4	11.6	49.5	50.0
Sandusky, Ohio .....	66.6	47.0	19.6	11.6	50.5
Sandy Hook, New Jersey .....	68.2	55.4	12.8	2.3	55.3
San Francisco, California .....	61.2	58.0	3.2	38.4	59.5
Savannah, Georgia .....	71.6	60.3	11.1	11.3	64.5
Smithville, North Carolina .....	72.6	61.5	11.1	11.0	62.1
Toledo, Ohio .....	67.4	47.9	19.5	13.5	50.3
Wilmington, North Carolina .....					

## COTTON REGION REPORTS.

The temperature in all districts was decidedly below the normal. The rainfall was largely in excess in the eastern districts, while marked deficiencies occurred in the western districts. The report from the district of Wilmington has not been received.

The following table shows the means of the maximum and

minimum temperatures, and the average rainfall for the several cotton districts, for the month of October, 1885, together with the averages for the three preceding years:

Temperature and rainfall data for the cotton districts, October, 1885.

Districts.	Rainfall.			Temperature.						Extremes for Oct., 1885.	
	Average for Oct. of three preceding years.	Average for Oct., 1885.	Departures.	Maximum.			Minimum.				
				Mean for Oct. of three preceding years.	Mean for Oct., 1885.	Departures.	Mean for Oct. of three preceding years.	Mean for Oct., 1885.	Departures.		
	Inch.	Inch.	Inch.	°	°	°	°	°	°	Max.	Min.
New Orleans...	2.71	1.23	- 1.49	82.7	73.6	- 9.1	62.3	50.3	-12.0	93	30
Savannah...	1.95	3.56	+ 1.61	82.8	74.3	- 8.5	61.0	55.5	- 5.5	92	37
Charleston...	1.89	4.83	+ 2.94	79.1	72.0	- 7.1	55.9	51.8	- 4.1	85	33
Atlanta...	1.66	5.66	+ 4.00	77.9	67.4	-10.5	56.3	47.9	- 8.4	79	29
Wilmington...	2.01	.....	.....	76.9	.....	.....	54.6	.....	.....	.....	.....
Memphis...	2.83	2.09	- 0.74	77.6	68.5	- 9.0	54.5	46.1	- 8.4	85	26
Galveston ..	4.14	1.65	- 2.49	83.1	77.2	- 5.9	59.9	54.4	- 5.5	90	20
Vicksburg...	3.59	1.19	- 2.40	80.7	72.2	- 8.5	58.3	48.3	- 10.0	82	31
Montgomery ..	1.58	1.67	+ 0.09	81.8	71.4	-10.4	57.8	49.8	- 8.0	86	28
Augusta...	1.51	4.91	+ 3.40	79.6	69.6	-10.0	56.8	48.9	- 7.9	83	22
Little Rock....	2.37	1.01	- 1.36	77.5	72.0	- 5.5	52.5	45.7	- 6.8	90	10
Mobile.....	2.15	2.06	- 0.09	82.0	72.9	- 9.1	58.5	49.8	- 8.7	85	21

\* Averages for two years only.

## WINDS.

The most frequent directions of the wind during October, 1885, are shown on chart ii by arrows flying with the wind; they are also given in the tables of miscellaneous meteorological data. In the extreme northwest, upper Mississippi and Missouri valleys, and in the Gulf States they were mostly from the north and northwest; in the south Atlantic states they were northeasterly; in the Ohio Valley, lower lake region, and in New England they were from southeast to southwest; in the middle Atlantic states, upper lake region, Rocky Mountain districts, and on the Pacific coast they were variable.

## HIGH WINDS.

[In miles per hour.]

On the summit of Mount Washington, New Hampshire, winds of fifty or more miles per hour occurred during the month as follows: 94, se., 14th; 90, s., 21st; 81, se., 13th; 77, w., 4th; 72, sw., 20th; 68, w., 11th; 60, n., 5th; 60, se., 3d; 60, sw., 22d; 60, ne., 30th; 59, w., 10th; 59, sw., 29th; 56, se., 2d; 52, sw., 19th; 50, w., 18th.

Other stations reporting wind-velocities of fifty or more miles per hour are as follows:

Pike's Peak, Colorado, 60, w., 10th; 58, nw., 4th; 56, nw., 27th; 54, w., 14th; 52, nw., 30th; 52, nw., 29th.

Valentine, Nebraska, 52, nw., 4th.

Sandy Hook, New Jersey, 60, e., 13th; 50, e., 29th.

Cape May, New Jersey, 52, w., 4th.

Barneget City, New Jersey, 52, e., 29th.

Kitty Hawk, North Carolina, 76, se., 29th; 53, se., 12th.

Fort Macon, North Carolina, 56, se., 12th.

Sandusky, Ohio, 54, n., 29th.

Cape Henry, Virginia, 52, e., 13th.

Fort Canby, Washington Territory, 56, se., 27th; 54, s., 29th; 53, s., 25th.

## LOCAL STORMS AND TORNADOES.

Block Island, Rhode Island, 3d: a violent thunder-storm occurred at about 9.30 a. m., accompanied by hail and wind-squalls, of short duration, of from forty to fifty miles per hour. Considerable damage was done to out-buildings, fences, etc.

Narragansett Pier, Rhode Island, 3d: a heavy thunder-storm, accompanied by high, variable winds and hail, began at 9.35 a. m. and continued for about one hour. The high winds caused considerable damage, and a large number of telephones were destroyed or damaged by lightning.

Westwood, Bergen county, New Jersey: a tornado occurred at this place at 1.15 p. m. on the 4th. The cloud was funnel-shaped, and moved in a northeasterly direction. The path of the tornado was about six miles in length and its width about